

CENTRAL INTELLIGENCE AGENCY

PROPOSED OFFICE BUILDING

N-182

LANGLEY, VIRGINIA

TENTATIVE SUBMISSION

OUTLINE SPECIFICATIONS

for

PLUMBING WORK

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N-182

TENTATIVE SUBMISSION
OUTLINE SPECIFICATIONS
for
PLUMBING WORK

P-01 SCOPE OF WORK

All required labor, materials, equipment, and Contractor's services necessary for complete installation of Plumbing Work in full conformity with requirements of all Authorities having jurisdiction; all as indicated on drawings and/or herein specified, including in general the following:

- a. Sanitary Yard Sewer System including manholes and connection to public sanitary sewer manhole.
- b. Storm Water Drainage Systems for buildings including roof drains, inside leaders, area drains, sump pumps, and house sewers to points 5 ft outside building wall.
- c. Sanitary Drainage and Vent Systems including drainage connections to plumbing fixtures and equipment requiring same, floor drains, sewage ejectors and house sewers connecting to yard sewers.
- d. Water Supply Systems including service from public meter at property line, tank fill pumps, elevated steel storage tank on tower, and distribution yard main.
- e. Domestic Water Supply Systems including services from yard mains, HW heating equipment, ChW equipment, and CW, HW and ChW connections to plumbing fixtures and equipment requiring same.
- f. Fire Protection Systems:
 1. Fire Protection System for site including connections to yard main and elevated storage tank, and fire hydrants.
 2. Fire Standpipe System including services from yard main, siamese, main risers in stairhalls with 2-1/2" fire hose outlets and isolated hose station risers, and hose stations.

WG, JCC-WG

P-1

3. Fire Extinguishers: 2-1/2 gal water type in hose cabinets; carbon dioxide type in kitchens, laboratories, machinery rooms, and boiler plant.

4. Sprinkler Systems: Wet-pipe spray type, for library stack areas, scrap paper storage room; plumbing, elevator, gear (2), paint, carpenter and machine shops; nitrate film storage building; incinerator rooms; garage, and auditorium stage and projection room areas, including services from yard main, siamese, alarm valves, and all required accessories.

5. Carbon Dioxide Fire Protection Systems: Automatic room flooding type, for secure vaults, including cylinder banks and rate-of-rise actuating systems.

g. Gas Systems: "Bottle" type for boiler plant and incinerators, including bottles and/or underground storage tank and distribution manifold, and connections to all outlets and other equipment requiring same.

h. Compressed Air System including connections to all outlets and equipment requiring same.

i. Insulation of CW, HW, ChW, and HW and ChW circulating piping, HW heaters; and sweatproofing of horizontal storm water drainage piping between roof drains and leaders and drainage piping between drinking fountains and stack or main drain line.

j. Plumbing Fixtures as indicated on drawings and/or hereinafter specified.

k. Excavation and Backfilling required for Plumbing Work outside building.

P-02 WORK NOT INCLUDED

a. Temporary water supply for construction.

b. Temporary toilet facilities for workmen.

c. Temporary fire protection during construction.

d. Storm water piping beyond 5 ft outside building wall and site drainage.

e. Excavation and backfilling required for Plumbing Work under building.

f. Kitchen, photography and laboratory equipment including dishwasher and glasswasher booster heaters, and stainless steel sinks.

- g. Finished painting of piping and equipment.
- h. Access ladders to fire control valves.
- i. Setting of access doors, and sump pit cover frames.
- j. Cutting and patching except for correcting Contractor's mistakes.
- k. Electrical wiring and mounting of starting and control equipment for electrically operated equipment and alarms.
- l. Steam and return piping for HW heaters including installation of steam regulating valves.
- m. Air compressors.
- n. Individual water coolers.
- o. Tower foundation for elevated storage tank.

P-03 GENERAL ITEMS

- a. As-Built Drawings: Record all deviations from contract drawings and deliver to Owner cloth tracings in ink showing work as actually installed.
- b. Valve Tags and Charts: 2" aluminum numbered tags on control valves, and approved metal framed charts, diagrams, and lists showing operation of each system, and location and purpose of valves.
- c. Air Chambers: Provide on individual water branches to fixtures, 12" high and same size as branch.
- d. Foundations: Concrete block enclosed in #18 USSG galv welded steel form and mound shaped rubber-in-shear vibration isolation rails under rotating machinery.
- e. Painting: Hangers and supports, and exposed black steel and cast iron piping, and steel and iron work: Primed with zinc chromate.
- f. Flashing: 6 lb lead flashing for roof drains, and piping through roof.
- g. Access Doors: Provide concealed valves (except in removable pan ceilings) with adequate sized access doors.

P-04 MATERIALS

a. Drainage Piping:

1. Underground Piping from Points 5 Ft Outside Building Wall: Std wt vitrified clay bell and spigot sewer pipe with hot poured or prefabricated bituminous joints. Use extra strength under roads, pavements, and under 8 ft or more cover.
2. Underground Piping to Points 5 Ft Outside Building Wall: EXH hub and spigot CI soil pipe and fittings with caulked lead joints.
3. Drainage and Vent Piping Inside Building: Galv std wt steel pipe with galv threaded CI drainage fittings and galv threaded MI vent fittings. Connect water closets with lead bends or necks.
4. Manholes: 6" manhole blocks or 8" brick on concrete slab with channels, 3/4" galv WI steps on 12" centers and CI roadway or walkway type (as required) frame and cover.

b. Water Piping:

1. Underground Piping: Class 150 "Enamelled" (thin cement lining) CI bell and spigot water pipe and Class D fittings with stuffing box type mechanical bolted assembly joints. Joints at fittings and valves reinforced with galv WI rods and clamps.
2. CW Piping Inside Building 5" and Larger: Galv std wt wrought iron pipe with galv or coated std wt MI or CI threaded or flanged fittings.
3. Other Piping Inside Building: Type L copper tubing with cast brass or wrought copper solder joint fittings, or std wt red brass pipe with std wt cast brass threaded fittings.
4. Fire Standpipe: Std wt steel pipe with std wt MI or threaded or flanged CI fittings. Pipe between siamese and check: Galv.
5. Sprinkler: Std wt steel pipe with std wt CI threaded or flanged fittings.

c. Carbon Dioxide Piping: Galv steel pipe, 3/4" and smaller, std wt; 1" and larger, extra heavy. Fittings, 2" and smaller, galv threaded extra heavy MI or steel; 2-1/2" and larger, threaded 3000 psi forged steel, galv threaded 2000 psi cast steel, or flanged 600 psi forged steel (Series 60) tongue and groove type.

d. Gas Piping: Std wt steel pipe with std wt MI threaded fittings inside and welded or "Dresser" fittings underground. Underground piping: "Mill-Wrapped".

e. Compressed Air Piping: Type L copper tubing with cast brass or wrought copper solder joint fittings.

f. Valves: Provide control valves where indicated, required, and on all branches.

1. General: 125 psi; 2-1/2" and smaller - brass; 3" and larger - flanged IBBM. Control valves: Rising stem gate valves. Check valves: Swing type except "Hager" spring type on tank fill pump discharge.

2. Underground: AWWA double disc type with valve box.

3. Sprinkler and Fire Standpipe: Underwriters' approved.

4. Fire Hydrants: Local Fire Dept approved type.

5. Gas: 2" and smaller; AGA brass gas cocks. 2-1/2" and larger; 175 psi CI lubricated plug cocks.

g. Roof Drains: Gravel roofs - CI sump type body with dome strainer. Deck roofs - CI body with brass top grate.

h. Floor Drains: CI body with integral double drainage flange and adjustable neck.

1. Acid Neutralizing Sumps: 12" dia x 12" high chemical stoneware with bolted cover and chemical charge.

j. Insulation:

1. Exposed: Factory applied field pasted 8 oz canvas jacket. Concealed: Banded 4 oz pasted canvas jacket.

2. Valves and Fittings: Built up with plastic asbestos cement and pasted canvas jacket.

3. CW Piping: Wool-felt sectional covering, 1" on mains and risers, and 1/2" on branches.

4. HW Mains and Risers: Std thickness 85% magnesia sectional covering.

5. HW Piping Branches: 2 ply (1/2") aircell asbestos sectional covering.

6. Sweatproofing: As specified for CW mains or 1" hair-felt with inner and outer wrapping of 15 lb asphalt saturated felt held on with copper wire.

7. ChW Piping: Std thickness "Fiberglas Dual Temperature" sectional pipe covering, light duty natural moulded cork sectional pipe covering, or LT-Thirty segmental natural cork sectional pipe covering.

8. HW Heaters: 1-1/2" thick 85% magnesia blocks with 1/2" wire mesh reinforced asbestos cement finish.

P-05 EQUIPMENT

a. Motors and Controllers: 1/3 hp and smaller: 120 volt, single phase, 60 cycle, AC; with disconnect switch, thermal overload protection, and HOA switch. Motors 1/2 hp and larger: 440 volt, 3 phase, 60 cycle, AC; with combination unfused disconnect switch, starter with thermal overload protection, and HOA switch. Starters: 100 hp and smaller - across-the-line type. 125 hp and larger - primary resistance type. Duplex equipment: Two controllers and manual transfer switch in one cabinet. Cabinets: NEMA-1.

b. Elevated Storage Tank: 300,000 gal NBFU approved butt-welded steel tank supported on 140 ft welded tubular steel columns on concrete foundations with steel riser pipe from bottom having inside and outside ladders, manhole near base, radiator type steam heating unit and required risers. Provide high and low water alarms in tank. Provide valve pit under tower.

c. Tank Fill Pumps: Duplex automatic flexible coupled horizontally split case IBBM centrifugal pumps; 350 gpm, 100 ft head at 1750 rpm with 15 hp motor; similar to Peerless 2-1/2A-12.

d. Sump Pumps: In each Basement mechanical area, duplex automatic vertical submerged IBBM centrifugal pumps; 300 gpm, 35 ft head at 1750 rpm with 5 hp motor; similar to Yeomans #3403I; with 3/8" galv steel cover plate, access manhole, galv welded angle iron frame (72" x 72" x 72" pit), electrode pump controls, and compression tube alarm.

e. Sewage Ejectors: Duplex automatic pneumatic units with CI pots, float switch or electrode control, compression tube alarm and individual air compressor; 30 gpm at 21 ft head with 1-1/2 hp motor.

f. HW Heaters:

1. In Main Building, duplex 54" x 168" copper lined 125 psi WP welded flange quality steel tank with removable 1-1/4" copper tubing element to heat 800 gph 120 deg rise with 40 psi

P-6

steam, with vacuum breaker, relief valve, dial thermometer, steam-regulating valve, and pipe leg stand.

2. In boiler plant, instantaneous steam type welded steel or cast CI shell with removable copper tubing element to heat required gph 120 deg rise with 40 psi steam, with relief valve, dial thermometer, steam regulating valve and thermostatic tempering valve.

3. Booster heaters: Instantaneous steam type welded steel or cast CI shell with removable copper tubing element; capacity as indicated, with relief valve, dial thermometer and steam regulating valve.

g. HW Circulating Pumps: Duplex automatic flexible coupled vertically split case IBBM centrifugal pumps; 15 gpm, 40 ft head at 3450 rpm with 1/3 hp motor; similar to Bell & Gossett #1522-14 with immersed type aquastat.

h. Alarms: Panel with 3" gong, and pilot lights and auto-reset manual bell silencer for required alarms.

i. Drinking Water Cooler Unit: Two package assemblies of metal jacketed insulated galv steel cooler tank with interior steel coils, 10 hp automatic refrigeration unit, duplex circulating pumps, filters, and required accessories and controls. Each cooler: 300 gal storage and 350 gph 80 F to 45 F in 90 F room; similar to Filtrine #M-300-RCP.

j. Fire Standpipe Equipment:

1. Fire Hose Stations: Underwriters' approved 1-1/2" rough brass angle hose valve; red enameled welded steel covered hose rack with brass rack nipple; 75 ft of 1-1/2" "Yellow Label Flax Line" unlined linen hose with brass couplings and red enameled galv iron nozzle; galv iron spanner wrench on brass chain. Trim: Satin finish CP.

2. Fire Hose Cabinets: Recessed type of #16 USSG welded steel with #12 USSG steel duo-panel door having wire glass panel, and CP lever catch, of size to accommodate required hose and 2-1/2 gal extinguisher.

3. Siamese: Underwriters' approved satin finish CP cast bronze flush wall type.

P-06 PLUMBING FIXTURES

a. General: Provided with stop valves and CP brass trim.

b. Water Closets: Siphon-jet elongated rim floor outlet bowl with exposed diaphragm type flush valve and VB, and open front open back type "Sani-Black" seat.

c. Urinals: Siphon-jet pedestal type with exposed foot operated diaphragm type flush valve.

d. Lavatories: 20" x 18" vit china with center-set combination supply and pop-up waste, supported on concealed arm built-in wall carrier. Where indicated, knee-operated mixing valve supply.

e. Slop Sinks: 24" x 20" AR enameled CI floor type with back, rim guard, and wall mounted combination supply with VB.

f. Drinking Fountains: Vit china semi-recessed type.

g. Showers: Adjustable stream ball-joint wall mounted head and built-in thermostatic mixing valve with check stops and strainers.

h. Sinks: 20" x 30" AR enameled CI sink with back, combination supply with soap dish, and open strainer waste.

i. Laundry Tub: Two compartment concrete laundry tub on angle iron frame with combination swing spout faucet.

j. Toilet Accessories: All accessories shall be CP brass securely attached in tamper-proof manner.

1. At each water closet, toilet paper holder.
2. At each water closet, coat hook.
3. At each lavatory, satin finish CP lather type soap dispenser.
4. At each lavatory, paper towel cabinet.